

**REMARKS**

Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the above supplemental amendments and the following comments.

Claim 54, 61, 68 and 78 have been amended. The amendments to Claim 54 and 68 are supported by, for example, the original specification at page 8, lines 9-10. The amendments to Claim 61 (from "outer" to "upper") are made merely for clarification (Please see the original specification at page 5, line 13), and do not narrow the scope of the protection. The amendments to Claim 78 are supported by, for example, original Claim 1. Therefore, the claim amendments do not introduce any new matter. As a result of the above amendments, Claims 51-88 are pending in this application. The (previously filed substitute) specification has been amended to correct the technical error from "Vd" to "Vd" (Please see the original specification at page 3, the last line).

The specific changes to the amended specification and claims are shown on the previous pages on separate sheets entitled AMENDMENTS TO THE SPECIFICATION AND, AMENDMENTS TO THE CLAIMS, respectively. On this set of pages, the insertions are underlined while the deletions are struck through.

**Discussion of Rejection of Claims Under 35 U.S.C. § 103(a)**

The Examiner has rejected Claims 54, 59, 60, 67 and 78-81 under 35 U.S.C. §103(a) as being unpatentable over Borel, et al. (U.S. Patent No. 4,940,916). Applicant believes that the rejections with regard to Claims 54, 59, 60 and 67 have been completely responded in the previous response dated March 31, 2003. In this paper, Applicant would like to argue patentability of the matrix system claims (Claims 78-81) in more detail.

Claim 78 recites, among other things, each of the electron sources comprising a whisker epitaxially grown on the substrate.

As discussed in the previous response in connection with Claim 51, the Borel reference does not disclose anything regarding "a whisker epitaxially grown on the substrate." The semiconductor terminology "epitaxially grown on the substrate" means grown with the same crystal structure as the substrate. Referring to Figure 4, the Borel patent only discloses that the micropoint (field emitter: 12) is deposited on the second resistive layer (24) of the conductive layer (5). That is, Borel does not disclose that the micropoint (12) is epitaxially grown on the

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substrate recited in Claim 78.

Claim 78 also recites, among other things, a junction between semiconductor materials with opposite conductivities(one example: p-n junction).

As discussed in the previous response in connection with Claim 67, the Borel reference does not disclose or teach the above features recited in Claim 78. Referring to Figure 4 and column 6, lines 24-29, the Borel reference only discloses that the second resistive layer (24) is deposited between the micropoint (field emitter: 12) and the conductor layer (22). That is, the Borel reference does not disclose, teach or suggest anything regarding "a junction between semiconductor materials with opposite conductivities."

In view of the above, Claim 78 is patentable over the Borel reference. Claims 79-81 depend from base Claim 78 and further define additional technical features. In view of patentability of the base claim and further additional features, the dependent claims are also patentable. Thus, withdrawal of the rejections is respectfully requested.

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**CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. If the Examiner has any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the indicated telephone number.

Respectfully submitted,

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